

Three Color Particle Optical Extinction Monitor, Phase II

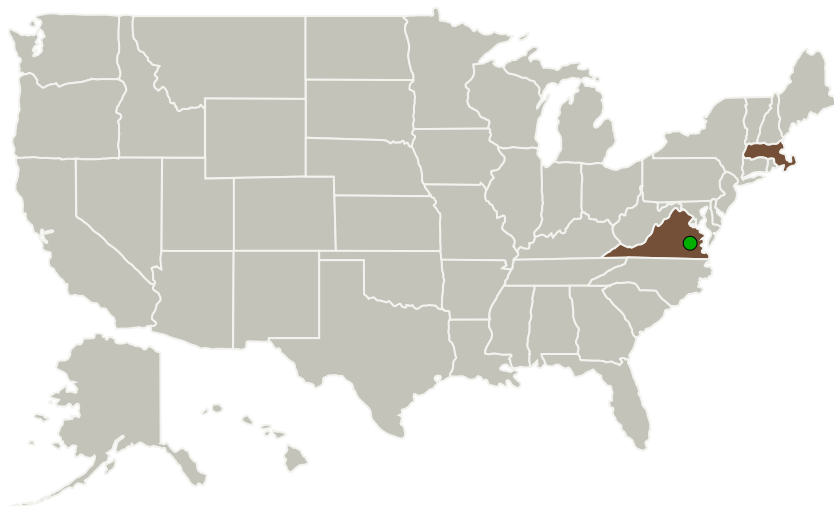
Completed Technology Project (2015 - 2018)



Project Introduction

We will design, build and test a multi-color (red, green, blue) particle optical extinction monitor suitable for use in either land or airborne applications. The monitor will also contain a fourth measurement cell to allow for real-time subtraction of interferences caused by gas phase interferences such as nitrogen dioxide. The instrument will fit into a rack-mountable box that less than 13" high (7U). Its time response will be less than 2 seconds and its precision (1 sigma) better than 1 inverse megameter in 1 second. The accuracy of the measurements will be within 5% of the values obtained using measurements of polystyrene latex spheres. It will provide user access through serial and/or USB port connections as well as over the Internet. A working unit will be delivered to NASA langley Research Center.

Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---------------------------------|-------------------------|-------------|--------------------------|
| Aerodyne Research, Inc | Lead Organization | Industry | Billerica, Massachusetts |
| ● Langley Research Center(LaRC) | Supporting Organization | NASA Center | Hampton, Virginia |



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Primary U.S. Work Locations

Massachusetts

Virginia

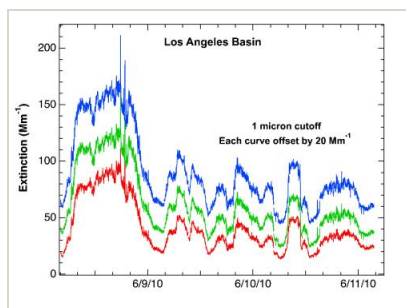
Project Transitions

**May 2015:** Project Start**May 2018:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140742>)

Images



Briefing Chart

Three Color Particle Optical
Extinction Monitor Briefing Chart
(<https://techport.nasa.gov/image/133715>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Organization:

Aerodyne Research, Inc

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

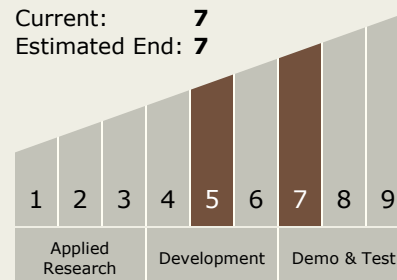
Carlos Torrez

Principal Investigator:

Andrew Freedman

Technology Maturity (TRL)

Start: 5
Current: 7
Estimated End: 7



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.3 Optical Components

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System